Baltimore Gas and Electric

Smart Grid Initiative

Abstract

Baltimore Gas and Electric's (BGE) Smart Grid Initiative consists of a territory-wide deployment of advanced metering infrastructure (AMI), implementation of a customer Web portal and home energy management reports, deployment of a direct load control program, and installation of a new customer care and billing system. BGE will replace or upgrade more than 1.25 million electric meters[1] to improve customer service, reduce BGE operation and maintenance costs, and offer customers a critical peak rebate program to help reduce peak demand and lower customer bills. Through a Web portal, energy management reports, emails, texts, and phone messaging, BGE delivers usage information to help customers better manage their energy usage. A direct load control program offers customers a rebate to enable cycling of central air conditioners and electric hot water heaters. In addition, a new billing system enables optimal utilization of the new technologies offered by these programs.

At-A-Glance

Recipient: Baltimore Gas and Electric

State: Maryland

NERC Region: Reliability First Corporation

Total Budget: $472,160,833

Federal Share: $200,000,000

Project Type: AMI and Customer Systems

Equipment

- **1,272,911 Smart Meters**
- **AMI Communication Systems**
  - **Meter Communications Network**
  - **Backhaul Communications**
- **Meter Data Management System**
- **Customer Web Portal Access for Residential/Small Commercial Customers**
- **400,000 Direct Load Control Devices**

Time-Based Rate Program (Residential, Opt-Out)

- **Critical Peak Rebates**

Key Targeted Benefits

- **Reduced Electricity Costs for Customers**
- **Reduced Operations and Maintenance Costs**
- **Deferred Investment in Transmission and Distribution Capacity Expansion**
- **Improved Electric Service Reliability**
- **Reduced Costs from Theft**
- **Reduced Greenhouse Gas and Criteria Pollutant Emissions**

Smart Grid Features

Communications infrastructure involves a two-way radio frequency network consisting of approximately 1,200 access points and relays designed to remotely connect smart meters to back-office systems.

Advanced metering infrastructure includes a territory-wide deployment of smart meters to 1,272,911 customers. Advanced meters record electric consumption data at intervals of an hour or less, enabling time-based rate programs. A meter data management system receives, processes, and stores customer meter data, and supports billing and critical-peak events data.

Advanced electricity service options offered through the project include a customer Web portal that provides energy usage information and tools to help customers better manage their energy consumption and bills. The Web portal provides daily energy usage data, energy peak event notifications, and budget alerts. BGE is also deploying an advanced customer care and billing system. This system handles service connections, meter reads, billing, payment processing, collections, and field services. In addition, the system processes AMI data for 2 million customers and provides an enhanced platform for customer education and interactions.

[1] In addition, BGE will replace gas meters through a different initiative.

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Direct load control involves deployment of about 400,000 devices. The direct load control devices enable customers to participate in the PeakRewards[SM] program, which provides incentives for lowering peak electricity usage. Customers receive credits on their electricity bills in exchange for allowing BGE to cycle air-conditioning units and electric hot water heaters during periods of high demand. By lowering peak demand, investments in generation, transmission, and distribution can be deferred, there is downward pressure on energy prices and customers have a tool to reduce their electric bills.

Time-based rate programs include critical peak rebates, which offer customers rebates in exchange for voluntarily reducing their peak electricity usage on days when they are notified that there is a critical peak event.

Timeline

Key Milestones	Target Dates
AMI asset deployment begins	Q2 2011
AMI asset deployment ends	Q3 2014
Customer Web portal rollout completed	Q3 2012

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